iPS-Interneuron Transplantation for Neural Repair after Stroke

Grant Award Details

iPS-Interneuron Transplantation for Neural Repair after Stroke

Grant Type: Inception - Discovery Stage Research Projects

Grant Number: DISC1-08723

Project Objective: To test the effect of iPS-interneuron transplantation for behavioral recovery and cellular tissue repair after stroke.

Investigator:

Name:	Stanley Carmichael
Institution:	University of California, Los Angeles
Type:	PI

Disease Focus: Neurological Disorders, Stroke

Human Stem Cell Use: iPS Cell

Cell Line Generation: iPS Cell

Award Value: $229,396

Status: Closed

Progress Reports

Reporting Period: Year 1

View Report

Grant Application Details

Application Title: iPS-Interneuron Transplantation for Neural Repair after Stroke

Public Abstract:

Research Objective

To determine if transplantation of iPS-interneurons cells (iPS-3i cells) enhances functional recovery in stroke.

Impact

Successful completion of the proposed studies will develop a brain repair therapy for stroke, an unmet clinical need with significant impact on society.

Major Proposed Activities

- To determine the recovery effect of transplantation of iPS-3i cells in the mouse at subacute (7 days after stroke) and chronic (21 days) points, using measures that mimic human functional recovery.
- To determine the integration and circuit properties of transplanted iPS-3i cells in stroke at subacute and chronic time points using anatomical and optogenetic circuit mapping.

Statement of Benefit to California:

Stroke is the leading cause of adult disability. There is no medical therapy that promotes recovery in this disease. This research will test the effect of a new cellular transplant strategy to promote recovery in stroke, using induced pluripotent stem cells that have been differentiated into interneurons. These cells have markedly improved survival, migration and engraftment than previous stem cell approaches in stroke, and induce a form of plasticity that mimics the limited recovery in stroke.
